United Nations S/2004/160

Security Council

Distr.: General
27 February 2004

Original: English

Note by the Secretary-General

The Secretary-General has the honour to transmit to the Security Council the sixteenth quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) (see annex). It is submitted by the Acting Executive Chairman of UNMOVIC in accordance with paragraph 12 of Security Council resolution 1284 (1999) of 17 December 1999.

04-24652 (E) 010304

Annex

Sixteenth quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission in accordance with paragraph 12 of Security Council resolution 1284 (1999)

I. Introduction

1. The present report, which is the sixteenth submitted in accordance with paragraph 12 of Security Council resolution 1284 (1999), covers the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) during the period from 1 December 2003 to 29 February 2004.

II. Developments

2. During the period under review, the Acting Executive Chairman has continued the practice of briefing the respective Presidents of the Security Council, representatives of Member States and officials of the Secretariat on the activities of UNMOVIC. He visited the Commission's Field Office in Cyprus and has also travelled to Moscow for discussions with the Deputy Minister for Foreign Affairs, Yuriy Fedotov, and other senior officials of the Foreign Ministry and the Munitions Agency of the Russian Federation, and to Vienna for discussions with officials of the Department for Disarmament, Arms Control and Non-Proliferation of the Austrian Foreign Ministry.

3. During the period under review, no official information was available to UNMOVIC on either the work of, or the results of, the investigations of the United States-led Iraq Survey Group in Iraq. Nor has the Survey Group requested any information from UNMOVIC.

4. Note has been made however of the testimony of David Kay, the former head of the Iraq Survey Group, before the United States Senate Armed Services Committee on 28 January 2004. At that hearing, among a number of other points, Mr. Kay mentioned that "the efforts that had been directed to this point [of time] have been sufficiently intense that it is unlikely that there were large stockpiles of deployed militarized chemical and biological weapons there [in Iraq]". The Commission has also taken note of the statement of Senator John Warner, Chairman of the United States Senate Armed Services Committee, during the same hearing that the present head of the Iraq Survey Group, Charles Duelfer, had provided assurances that the Group "will be prepared to present to the Congress a second official interim report in the time frame of late March [2004]". The Commission hopes that that report will be made available to it.

5. The Commission has continued to assess material that is in the public domain on the issues pertaining to Iraq's weapons of mass destruction and to compare it against what is known by UNMOVIC about Iraq's various weapons programmes. An example is the discovery by Danish troops of 120-mm mortars in southern Iraq in January, reported in the media as possibly containing a blistering chemical-weapons agent. A statement was later made by the Danish Army to the effect that the laboratory test results on the 120-mm mortars had been negative for the presence of

chemical weapons agents. This is consistent with the Commission's study on Iraq's non-conventional munitions, as Iraq's chemical warfare arsenal was not known to include such 120-mm mortars. Iraq is known to have filled mortar shells only with riot control agents and conventional explosives. A summary of what was previously known to the Commission and UNMOVIC findings during inspections with respect to Iraq's chemical and biological munitions is set out in appendix I to the present report.

III. Other activities

Ongoing monitoring and verification plan

6. The Commission's headquarters staff continues the work on draft modifications to the ongoing monitoring and verification plan for Iraq and its annexes, approved by the Security Council in resolution 715 (1991), including the legal framework, operating procedures, and practical arrangements regarding monitoring and verification.

7. The work comprises the incorporation of experiences and practices gained from previous extensive inspection and monitoring activities, revisions of the annexes to the monitoring plan and the updating of the items and materials therein contained in line with technological advances. It also involves the revision of the contents and the formats of the declarations required of Iraq for the different weapons disciplines. The work also aims to take account of the changed circumstances on the ground in Iraq following the last war.

8. It should be noted that, while the list of items and materials subject to the provisions of the export/import mechanism in resolution 1051 (1996) was updated in June 2001, the annexes to the monitoring plan approved in resolution 715 (1991) have not been updated since 1995. There has been a critical assessment of the merit and practicality of monitoring the items included in the current annexes to the plan. This has resulted in a sharper focus on monitoring items that are associated with "choke points" within the processes of dual-use facilities with potential for the production of proscribed items and materials. There have also been some proposed changes to the monitoring plan to keep it in step with amendments and updates to the various multilateral non-proliferation regimes.

9. The draft revisions aim at making the monitoring and verification system technically correct and unambiguous so that all parties (Iraq, the Commission and supplier States) can implement their rights and obligations in an effective manner. An international panel of experts may be convened in the near future to conduct a technical assessment of the proposals, followed by a review by the UNMOVIC College of Commissioners.

Compendium of Iraq's past proscribed weapons and programmes

10. Another major effort under way is the compilation of a compendium on the nature and extent of Iraq's past proscribed weapons and programmes. An outline of key elements of this work is found hereafter.

11. The compendium looks at the origins of the programmes, including the political and security environment that prompted decisions that led to their establishment. Iraq's rationale for the development of chemical and biological

weapons and means for their delivery is explored, as is the degree to which Iraq saw its chemical and biological weapons programmes as a deterrent or whether it saw value in having offensive capabilities. The extent to which Iraq had a coherent concept of use or military doctrine for its chemical and biological weapons and what role such weapons played in its overall military doctrine is another issue being studied.

12. While Iraq followed the same general routes and experience as other States, it did adopt some unique methods and activities. Iraq's programmes reveal elements which it is essential to understand if wider non-proliferation efforts are to be strengthened.

13. Iraq utilized domestic developments in the fields of military and civilian science and technology for its now proscribed weapons. In several cases, research projects undertaken for defensive purposes were later diverted to offensive activities. One of the aspects of the work in the compendium is therefore to examine the transition from defensive to offensive activities. The transition can be illustrated through Iraq's chemical weapons programme and its history. Iraq's Chemical Corps was created in the mid-1960s with the task of nuclear, biological and chemical protection of troops and the civilian population. As part of its efforts at defensive research, however, Iraq established a laboratory-scale facility to gain practical experience in the synthesis of chemical warfare agents and the evaluation of their properties. Although production of laboratory quantities of chemical weapons agents could have been justified for defensive purposes, such as the calibration of detection instruments and testing of protective equipment, the work of the laboratory also constituted a necessary step in the training of a national cadre for future dedicated chemical weapons research and production. In addition, it contributed to the creation of relevant support infrastructure and a system for the acquisition of equipment and materials. Thus, the development of a defensive laboratory in the period from 1971 to 1973 can be considered as a preparatory stage of Iraq's familiarization with more specific chemical weapons technology and later expansion. The effect of training in foreign centres and universities of Iraqi personnel involved in the weapons of mass destruction programmes is also part of the study.

14. The contribution of Iraq's industrial and conventional weapons projects to its chemical and biological weapons programmes and their means of delivery will also be addressed in the compendium. Iraq's chemical weapons programme was first established in the State Establishment for Pesticide Production, which produced both pesticides and chemical weapons agent. Other parts of Iraq's legitimate industry contributed significant elements to the various chemical and biological weapons programmes and some parts were taken over and their capabilities changed to chemical and biological weapons production. For example, the Daura Foot and Mouth Disease vaccine production facility was taken over by Iraq's Technical Research Centre (the forerunner of the biological weapons programme) and was used for large-scale *Botulinum* toxin production.

15. As part of the "lessons learned", the compendium will also explore specific signatures and indicators of activities relating to weapons of mass destruction and the identification of related facilities, and how the detection of those signs can be applied to future monitoring. Another issue explored is "conversion" or "adaptation" whereby Iraq used modified conventional arms as the basis for the delivery of chemical and biological agents even though they may not have been the most suited

or effective. This leads to another area of study which is the extent to which conventional munitions "signatures" must be monitored in an effort to detect possible activities relating to weapons of mass destruction.

16. The compendium will further examine the extent of assistance and supplies from outside Iraq and the methods used by Iraq to hide the true purpose of some of its procurement and the importance of this in certain programmes. While there are well-established cases of assistance with items and technologies relating to weapons of mass destruction being knowingly provided to Iraq, there were also cases when the suppliers were unaware of the end use of the items and materials sold to Iraq. In several instances Iraq created "cover stories" or actual parallel projects to ensure that suppliers or those providing technical assistance would not become aware of the true nature of the facilities where their equipment or expertise was to be used. Iraq also established elaborate networks of front companies to obtain materials. The compendium attempts to chart these and the financial and organizational infrastructure established to support the networks both inside and outside Iraq. Such an understanding may be useful and applicable in other non-proliferation contexts.

UNMOVIC network of laboratories

17. The Commission has established a network of accredited analytical laboratories, according to their capabilities, and arranged contracts for the analysis of chemical and biological samples and hazardous materials. UNMOVIC is in the process of renewing its contracts with those laboratories willing to provide "fee-for-service" support to UNMOVIC. Appendix II to this report provides information about the process and the operation of the Commission's laboratory network.

Compilation of biological sample analysis

18. A biological sampling, screening and analysis report has been compiled. The report contains detailed descriptions of all samples handled by the biological inspection team during the period from November 2002 to March 2003, statistical data, and the results of screening performed by UNMOVIC and analysis performed by network laboratories. In addition, the report describes the analytical capability, techniques and procedures applied by UNMOVIC in this area.

Destruction, removal or rendering harmless

19. Appendix I to the Commission's thirteenth and fifteenth quarterly reports (S/2003/580 and S/2003/1135) provided details of the weapons and associated production equipment destroyed, removed or rendered harmless in Iraq from 1991 onwards. For ease of reference, a chart is now provided that lays out this work in a chronological fashion (see appendices III.A and III.B to the present report).

IV. Database, archive and information technology

20. The UNMOVIC database continues to be updated and the electronic archiving of documents continued.

21. UNMOVIC has set up an information technology training environment that mirrors both the systems available at Headquarters and what had been set up at the Commission's Baghdad Centre. Trainees are able to access a demonstration site

database, participate in mock inspections, search for test documents, etc. This allows UNMOVIC to better prepare the information technology skills of future inspectors.

V. Non-inspection sources of information

22. The Office for Outside Information continues to maintain contacts with representatives of Member States which had provided information to UNMOVIC pertaining to Iraq's proscribed weapons programmes. The Office continues to collect and analyse material from open sources that may be relevant to the work of the Commission.

23. Photographic interpretation continues of post-war commercial satellite imagery of sites in Iraq relevant for inspection and monitoring.

VI. Field offices in Baghdad, Larnaca and Bahrain

Baghdad

24. UNMOVIC continues to reduce its remaining local staff in Baghdad. On 1 January 2004, 10 staff members were transferred to the United Nations Assistance Mission for Iraq (UNAMI). By the end of February 2004, UNMOVIC will have 10 local staff members remaining in Baghdad to maintain and protect the non-expendable equipment in the Canal Hotel, including two laboratories (chemical and biological) and a 40-foot mobile chemical laboratory.

Larnaca

25. The Cyprus Field Office continues to store and maintain the UNMOVIC inspection and monitoring equipment recovered from Iraq. Some items of equipment provided by supporting Governments were recovered from the Canal Hotel in September 2003 and have been returned at the request of the relevant authorities to Austria and the United Kingdom. In addition, the office continues to manage the remaining staff in Baghdad. Early in February 2004, experts from Headquarters travelled to Larnaca to check the serviceability and maintenance requirements of the inspection equipment to continue to maintain two-week operational readiness. The experts also identified and selected equipment for the biological weapons inspection training course in the United Kingdom in February/March 2004 and for future training courses.

Bahrain

26. The premises of the UNMOVIC Field Office in Bahrain were handed over by UNMOVIC to Civil Aviation Affairs of the Ministry of Transport of Bahrain on 3 December 2003. The handover concludes a successful 13-year contribution of the Field Office in Bahrain to carrying out the Security Council mandate for the Special Commission, UNMOVIC and the International Atomic Energy Agency in Iraq. This contribution would not have been possible without the sustained support of the Kingdom of Bahrain as well as that of UNDP and UNEP.

VII. Staffing

27. The core staff of the United Nations Monitoring, Verification and Inspection Commission in the Professional grades at Headquarters totals 51 weapons experts and other staff (of 24 nationalities). Of these, nine are women.

28. As noted in paragraphs 24 and 25 above, UNMOVIC has a small number of staff in Cyprus and Baghdad.

VIII. Technical visits, meetings and workshops

29. An UNMOVIC expert met with experts of the IAEA Iraq Nuclear Verification Office in Vienna to exchange information relating to Iraq's procurement activities. In addition, UNMOVIC experts visited various laboratory locations in Vienna to check their suitability for the installation, operation and maintenance of the Commission's chemical and biological analytical equipment to maintain its operational readiness.

IX. Training

30. During the reporting period UNMOVIC has continued its training activities and resumed advanced training of experts from the roster.

(a) A specialized training course was conducted from 8 to 11 December 2003 in New York on the operation of state-of-the-art identification instruments for biological weapons agents. Headquarters staff and invited experts from the roster participated.

(b) Another specialized course was conducted from 27 to 29 January 2004, which allowed a number of UNMOVIC staff to obtain internationally recognized certificates for the shipment of hazardous materials, applying International Air Transport Association regulations. Such certificates are required for the shipment of samples to analytical laboratories worldwide.

(c) Enhanced training of Headquarters staff in techniques and equipment used in field operations continued, covering topics such as chemical and alloy analysers, surveillance cameras, personal dosimeters and sampling kits.

(d) A two-week advanced course for biological experts on the roster started on 23 February in Swindon, United Kingdom. The course, organized with the support of the Government of the United Kingdom, is devoted to augmenting practical inspection skills to be used during monitoring inspections of biological sites. A practice inspection of a biological facility offered by the Government of the United Kingdom will be conducted during the course.

31. The Commission remains grateful to those Governments that have supported its training activities.

X. College of Commissioners

32. On 19 January 2004, the Secretary-General appointed Anatoliy Scherba of Ukraine to the College of Commissioners. Mr. Scherba replaced Kostyantyn Gryshchenko (Ukraine), who had tendered his resignation in November 2003.

33. The College of Commissioners convened in New York for its fifteenth regular session on 24 February 2004. As on previous occasions, observers from the International Atomic Energy Agency and the Organization for the Prohibition of Chemical Weapons attended.

34. In his introductory statement to the College, the Acting Executive Chairman outlined the work done by UNMOVIC staff since the previous meeting of the College. UNMOVIC staff made a presentation on progress in the revision of the monitoring requirements for Iraq.

35. In the discussion that followed, the College commended the Acting Executive Chairman and UNMOVIC staff for the ongoing work and the presentations. Progress on the compendium, as well as on draft modifications to the ongoing monitoring and verification plan to take account of the altered circumstances of operation, were noted. The College underlined the importance of being prepared for ongoing monitoring in the event that the Security Council should ask UNMOVIC to implement existing Council resolutions on Iraq. The College looked forward to reviewing the proposed amended plan when work on it was completed. The importance of the compendium and the lessons that it might provide in the context of disarmament and non-proliferation generally was also stressed. The College supported the training activities of the Commission with a view to updating on a regular basis the expertise of its core staff and experts on the roster. Training should also take into account the changed circumstances in Iraq.

36. It was recognized that while an early discussion of the future role of UNMOVIC by the Security Council would be desirable, the time frame for such a discussion was a matter for the Council. Some concern was expressed that there had been further resignations of expert staff. It was noted that trained and experienced experts, once dispersed, were difficult to reassemble at short notice.

37. The date of the next meeting of the College was provisionally set for 24 or 25 May 2004.

38. In accordance with paragraph 5 of resolution 1284 (1999), the Commissioners were consulted on the contents of the present report.

Appendix I

A summary of Iraq's chemical and biological munitions

Introduction

1. Open source reports announced the discovery of some munitions in southern Iraq in January 2004, and speculated that those munitions contained prohibited chemical warfare agents. Subsequently, it was declared that the munitions in question did not contain prohibited chemical warfare agents.

2. However, the reports cast a spotlight on the subject of prohibited munitions in general and specifically on what was previously known about Iraq's chemical and biological munitions and what was discovered during the period of UNMOVIC inspection activities in Iraq.

3. From 27 November 2002 to 17 March 2003, UNMOVIC conducted over 90 inspections of munitions-related facilities in Iraq. During the course of the inspections a small number of proscribed munitions, components of proscribed munitions or suspect related items were either discovered by UNMOVIC inspectors or examined as the result of declarations by Iraq. No evidence of either current or recent development or production of proscribed munitions was uncovered.

4. The UNMOVIC findings regarding munitions either designed or possibly intended for use with chemical or biological agents and what was previously known about those munitions are summarized below.

Findings regarding confirmed chemical and biological warfare munitions

5. The four types of munitions referred to in the following paragraphs were all declared by Iraq as having been developed for use with chemical and biological warfare agents and had been destroyed during the period of activity of the Special Commission. The discovery of some of these types of munition by UNMOVIC suggests that residual munitions from the former Iraqi chemical and biological weapons programme may be found in the future.

155-mm artillery projectiles

6. Iraq purchased tens of thousands of empty 155-mm artillery projectiles designed to disseminate smoke compounds. Subsequently, the original markings were generally painted over and the projectiles filled with approximately 3.5 litres of the chemical warfare agent mustard. More than 10,000 of these projectiles were destroyed under the supervision of the Special Commission.

7. In October 2002, Iraq declared the existence of 10 mustard-filled munitions at the former Muthanna chemical weapons facility. UNMOVIC was previously aware of the 10 155-mm mustard-filled artillery projectiles remaining from uncompleted Special Commission operations. During operations in mid-February 2003, UNMOVIC inspectors used remote-controlled drilling equipment to both sample and evacuate the contents of the projectiles. Laboratory analysis of the samples

confirmed the contents as high-purity mustard. Both the mustard and the projecti
were destroyed in subsequent operations.

122-mm rocket warheads

8. Iraq purchased or produced more than 100,000 empty 122-mm roc
warheads suitable for use with chemical weapons agents. Several different models
warhead were supplied by foreign manufacturers, including the Sakr-18 and 30;
Firos-25 and other manufacturers' copies of those warheads. Iraq also produc
indigenously both aluminium and steel 122-mm warheads similar to those purchas
abroad. The Special Commission supervised the destruction of thousands of th
warheads that had been filled with the nerve agent Sarin. Iraq declared that it h
unilaterally destroyed thousands more.

9. Eighteen 122-mm rocket warheads designed for use with chemical agents we
either declared by Iraq in January 2003 or were discovered by UNMOV
inspectors. The munitions included four Firos warheads declared by Iraq and
Sakr-18 warheads and one Al-Buraq warhead discovered by UNMOVIC inspecto
All of the warheads were examined and no indication of prohibited chemicals w
found.

Sub-munitions for cluster bombs

10. In its declaration of December 2002, Iraq described tests conducted in 1988
250-kg CB-250 cluster bombs containing 18 3.5-litre sub-munitions filled with
chemical agent simulant. The Special Commission recovered examples of t
versions of these 122-mm sub-munitions and examined the type of cluster bom
they were tested in.

11. UNMOVIC inspectors visited several relevant sites in an effort to gain a cl
understanding of Iraqi work relating to cluster bombs. During the course of
inspections, a 122-mm sub-munition designed to contain and dissemin
approximately 2 litres of liquid agent was discovered. Subsequently, this su
munition was identified as the 3.5-litre chemical sub-munition declared in
declaration of December 2002 as being tested in the CB-250 cluster bomb. This su
munition was not completely intact and did not contain prohibited agents.

R-400 aircraft bombs

12. Iraq developed the R-400 series of bombs to meet technical needs expressed
the Air Force. The steel body 100-litre capacity R-400 was closely patterned af
the 375-kg BRI-P parachute-retarded high explosive filled bomb that Iraq h
purchased in substantial numbers. Biological warfare agents were loaded in
R-400 A version (most had an internal epoxy coating), whereas chemical age
were intended for the uncoated R-400's. Iraq declared the unilateral destruction
some of these bombs and the Special Commission supervised the destruction
others.

13. In February 2003, Iraq invited UNMOVIC to witness the excavation of
remains of R-400 series bombs that had been unilaterally destroyed. Eight in
R-400 bombs were recovered, together with components from 96 additional bo
of the same type. As noted in earlier reports to the Security Council, subseq
laboratory analysis of liquid samples collected by UNMOVIC from two of the in

bombs revealed evidence of fragments of the DNA of *Bacillus anthracis* and of the chemical compounds Iraq used to neutralize the biological agent.

Findings regarding munitions and components linked to prohibited programmes

14. UNMOVIC inspectors discovered munitions and munition components similar to items Iraq included in its declaration of December 2002. However, no linkage with prohibited programmes was conclusively established prior to the withdrawal of inspectors in March 2003.

107-mm rocket warhead

15. Iraq acquired substantial quantities of 107-mm short-range ground-to-ground rockets with conventional warheads. The declaration of December 2002 mentions that Iraq considered, but did not implement, development of a chemical warhead for this rocket.

16. UNMOVIC inspectors discovered a single example of an unfinished aluminium base plate similar in design to base plates for known chemical warheads for other rockets. The diameter of the example discovered suggests that it was intended for a 107-mm warhead.

540-mm rocket warhead

17. The 540-mm Luna (Frog-7) rocket is a large battlefield support weapon with a 70-km range. The declaration of December 2002 includes statements regarding the proposed development of several different types of warheads for the Luna, including a cluster warhead for use with chemical agents.

18. An empty fibreglass cluster warhead for the 540-mm Luna rocket was discovered by UNMOVIC inspectors. UNMOVIC believes this warhead is possibly the one described in Iraq's declaration as having been proposed for use with chemical sub-munitions.

Findings regarding munitions and components whose purpose is under review

19. UNMOVIC inspectors discovered munitions and munition components that are not described in Iraq's declaration of December 2002 although they have characteristics consistent with chemical or biological munitions. It was not possible to clarify the actual purpose of the following items prior to the withdrawal of the inspectors.

- A small number of components of an unusual 81-mm rocket warhead were discovered at two sites. Subsequent comparison of the components with similar components of known chemical rocket warheads suggests that they are part of two different warheads for 81-mm rockets, possibly intended for use with proscribed agents. No trace of proscribed agents was found on the recovered components.

- A fibreglass mould that Iraq identified as intended to produce a cluster warhead for a 200-mm rocket was discovered. Subsequently, inspectors discovered parts identical in design to the base plate for a 122-mm chemical rocket warhead but appropriate in diameter for a rocket of 200-mm diameter. The extent of Iraq's work on 200-mm rockets and the linkage between the warhead mould and the base plate had not been resolved prior to the departure of the inspectors.

- An unusual sub-munition fuse was discovered. This fuse was reportedly intended for use with a conventional sub-munition for the previously described 200-mm rocket cluster warhead. However, subsequent analysis at UNMOVIC headquarters in New York disclosed that the fuse was similar to one observed on an unidentified sub-munition in a video of Iraqi tests of chemical sub-munitions. The detailed analysis of the video pertaining to this sub-munition was carried out after the withdrawal of UNMOVIC inspectors thereby preventing the necessary follow-up investigation.

- A small number of 155-mm steel spheres pierced with a pattern of small holes were discovered at two sites. These spheres were designed for use as sub-munitions in the Iraqi-built Nasr-28 cluster bomb. Site representatives stated that the spheres were designed to spray a smoke-producing compound as they rebounded in the air following impact with the ground. UNMOVIC could not conduct an adequate follow-up investigation for lack of time.

Appendix II

UNMOVIC network of laboratories

Introduction

1. UNMOVIC planned and employed a three-tiered analysis protocol for samples collected in Iraq. In the first stage, collected samples were checked on site for immediate hazards using military and industrial safety monitors. This information was used to help determine sample handling procedures, and to prioritize analysis. The second stage comprised screening at UNMOVIC laboratories in Baghdad. If this evaluation gave ambiguous results, or the results required further verification, it is UNMOVIC policy to send sample aliquots to at least two of the Commission's network laboratories for the final, third stage of analysis. Each laboratory was required to perform analyses as specified by UNMOVIC. The results were then delivered to the Commission for assessment and comparison. If questions arose upon receipt of those results, clarifications would have been requested by UNMOVIC from the individual laboratories.

2. By creating the network, UNMOVIC not only increased its analytical capabilities but also established and maintained working relations with selected laboratories. This proved useful and profitable in many ways, including the use of professionals from those laboratories as experts on the UNMOVIC roster.

3. It was also contractually ensured that UNMOVIC was the only proprietor of both the samples and any information related to them.

Requirements for the laboratory network

4. The Commission maximized its flexibility by maintaining contracts with qualified institutions throughout the world. UNMOVIC accepted laboratories into the network using a set process. First, a request for proposals describing the chemical and biological group analysis requirements was sent to the prospective laboratories. The requirements contained listed compounds under the ongoing monitoring and verification plan that UNMOVIC expected to look for during its inspections and the types of analysis it might require. UNMOVIC also required that some special instrumentation be available to analyse samples collected to monitor and verify the composition of missile propellants, munitions and industrial products. Other requirements included conformance with UNMOVIC chain-of-custody regulations, agreement to analyse samples within two weeks of receipt, fixed pricing, and possession of quality and safety accreditations from their national authorities as well as international bodies such as ISO. Each laboratory submitted written proposals in response to the request for proposals. If the proposal was deemed satisfactory, the facilities were then reviewed on site for their technical capabilities. Laboratories that met the Commission requirements were awarded a one year fee-for-service contract. UNMOVIC has renewed those contracts that were scheduled to expire in 2004, and has begun contracts with new laboratories in order to maintain a maximum state of readiness. At the time of inspections in Iraq, UNMOVIC had contracts with seven qualifying laboratories around the world. Since March 2003, the Commission has been in the process of expanding its network of laboratories to 11 facilities. The laboratories are listed in the table.

5. Upon receipt of a sample for analysis, the laboratory would have to (a) ensure that the information and data provided by UNMOVIC would be sufficient to properly conduct each analysis requested; (b) conduct the analysis in accordance with UNMOVIC requirements using recognized procedures; and (c) maintain chain-of-custody documentation on each sample starting from its receipt. After analysis, each laboratory was required to submit a report describing the work performed and related analysis results. The report was also required to include copies of import and shipping permits, and photographs of the samples as received.

Sample transportation

6. When samples had to be transported to the network laboratories, UNMOVIC had designated staff, trained to ship the materials in compliance with the International Air Transport Association (IATA), related national government, and airline safety regulations. After the samples were prepared, they were flown on a United Nations aircraft to the UNMOVIC field office in Larnaca. The samples were then sent to a member of the laboratory network. In those cases where sample transportation requirements went beyond IATA regulations, UNMOVIC was in contact with commercial dangerous goods shippers to provide the necessary services. Finally, in the case of hazardous samples such as explosives or missile propellant components, UNMOVIC negotiated an ad hoc arrangement for a military aircraft to provide transportation to an appropriate network laboratory.

List of the network laboratories of UNMOVIC

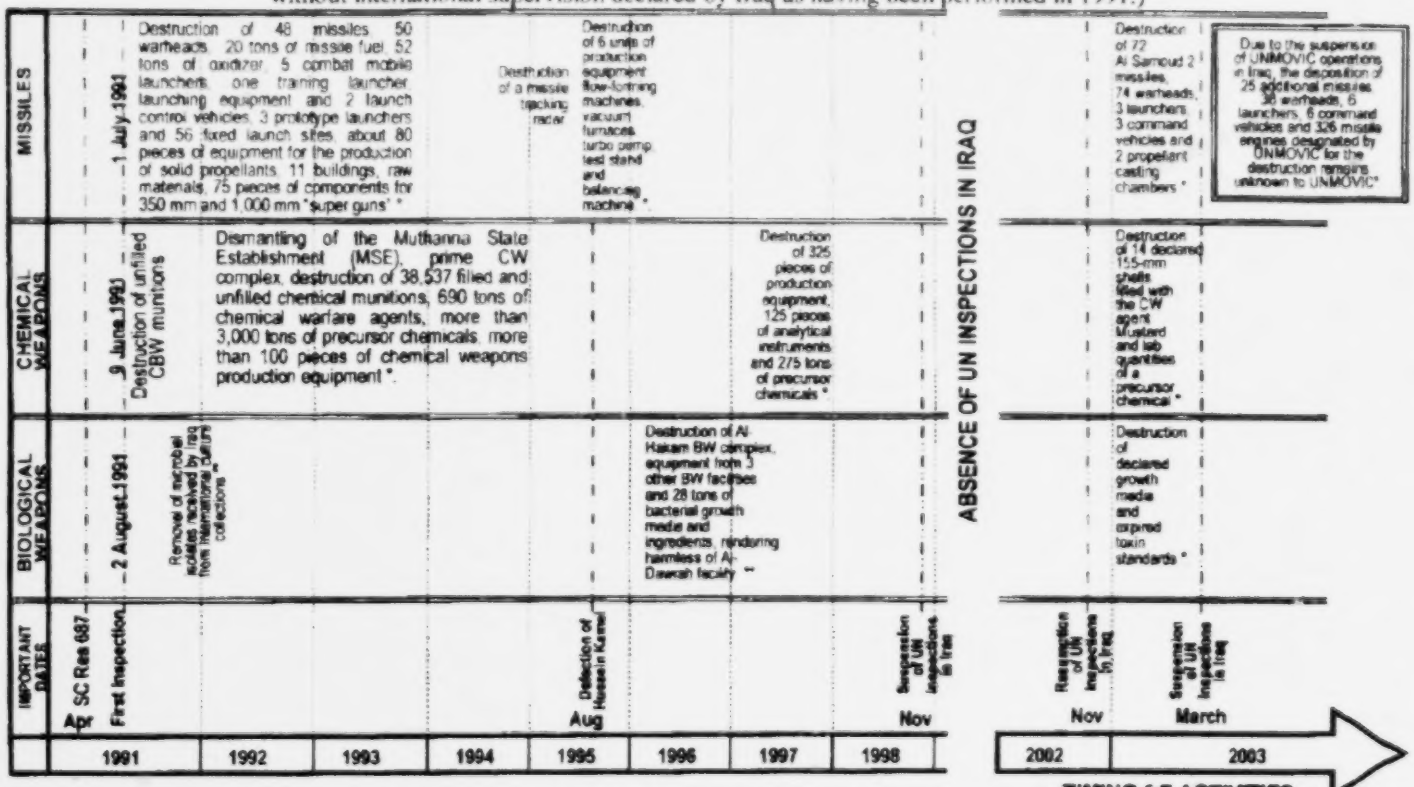
Laboratory	*Analysis duties*
ABC Shutz, (WIS)Munster/Oertze, Germany	Biological analysis
Centre for Applied Microbiology and Research, Porton Down, United Kingdom	Biological analysis
Centre de Recherche du Service de Santé des Armées, La Tronche, France	Biological analysis
Centre des Etudes du Bouchet (CEB), Vert le Petit, France	Chemical and biological analysis
Chemical Defence Laboratory, Beijing	Chemical analysis
Defence Science and Technology Laboratory, Porton Down, United Kingdom	Chemical analysis
Finnish Verification Institute (VERIFIN), Helsinki	Chemical analysis
GosNIIOKht, Moscow[a]	Chemical analysis
Laboratorium Spietz, Switzerland	Chemical analysis
Swedish Defence Research Agency (FOI), Umea, Sweden	Chemical and biological analysis
TNO-Prins Maurits Laboratory, Rijswijk, Netherlands	Chemical and biological analysis

[a] Contract in process.

Appendix III.A

Chronology of the destruction, removal or rendering harmless of items and materials by Iraq under the supervision of the Special Commission/UNMOVIC in accordance with Security Council resolution 687 (1991)

(This chronology does not include unilateral destruction of proscribed items and materials without international supervision declared by Iraq as having been performed in 1991.)


FIELDS OF ACTIVITY
MISSILES
CHEMICAL WEAPONS
BIOLOGICAL WEAPONS
IMPORTANT DATES
ABSENCE OF UN INSPECTIONS IN IRAQ
Destruction of 48 missiles, 50 warheads, 20 tons of missile fuel, 52 tons of oxidizer, 5 combat mobile launchers, one training launcher, launching equipment and 2 launch control vehicles, 3 prototype launchers and 56 fixed launch sites, about 80 pieces of equipment for the production of solid propellants, 11 buildings, raw materials, 75 pieces of components for 350 mm and 1,000 mm "super guns" *
Destruction of a missile tracking radar
Destruction of 6 units of production equipment (flow-forming machines, vacuum furnaces, turbo pump test stand and balancing machine) *.
Destruction of 72 Al Samoud 2 missiles, 74 warheads, 3 launchers, 3 command vehicles and 2 propellant casting chambers *
Due to the suspension of UNMOVIC operations in Iraq, the disposition of 25 additional missiles, 36 warheads, 6 launchers, 6 command vehicles and 326 missile engines designated by UNMOVIC for the destruction remains unknown to UNMOVIC*
1 July 1991
9 June 1993
Destruction of unfilled CBW munitions
Dismantling of the Muthanna State Establishment (MSE), prime CW complex, destruction of 38,537 filled and unfilled chemical munitions, 690 tons of chemical warfare agents, more than 3,000 tons of precursor chemicals, more than 100 pieces of chemical weapons production equipment *.
Destruction of 325 pieces of production equipment, 125 pieces of analytical instruments and 275 tons of precursor chemicals *
Destruction of 14 declared 155-mm shells filled with the CW agent Mustard and lab quantities of a precursor chemical *
2 August 1991
Removal of microbial isolates received by Iraq from international culture collections **
Destruction of Al Hakam BW complex, equipment from 3 other BW facilities and 28 tons of bacterial growth media and ingredients, rendering harmless of Al-Dawrah facility **
Destruction of declared growth media and expired toxin standards *
Apr
SC Res 687
First inspection
Aug
Defection of Hussein Kamel
Nov
Suspension of UN inspections in Iraq
Nov
Resumption of UN inspections in Iraq
March
Suspension of UN inspections in Iraq
1991
1992
1993
1994
1995
1996
1997
1998
2002
2003

** For details see fifteenth quarterly report (S/2003/1135 of 26 November 2003).

Appendix III.B

Major proscribed items and materials declared by Iraq as having been destroyed by the coalition during the 1991 Gulf war and unilaterally by Iraq in 1991

(This does not include proscribed items and materials declared by Iraq as having been discarded prior to 1991)

Field	Items and materials declared by Iraq as having been destroyed by the Coalition during the 1991 Gulf war	Items and materials declared by Iraq as having been destroyed unilaterally in 1991
Proscribed missiles	▪ Many structures that hosted proscribed missile activities. (However, most of the equipment therein had been evacuated prior to the bombardment.) ▪ No operational missiles and launchers were destroyed.	▪ 85 proscribed missiles. ▪ 165 missile warheads (CBW warheads are not included). ▪ 5 imported mobile launchers. ▪ Launching equipment of 4 indigenous mobile launchers. ▪ 137 tons of missile fuel. ▪ 407 tons of missile oxidizer. ▪ Indigenous missile components.
Chemical weapons	▪ About 42,000 chemical munitions, including 36,500 unfilled and 5,500 filled with CW agents. ▪ Over 800 tons of key precursors for the production of CW agents. ▪ 15 CW production units at the Muthanna State Establishment, over 100 pieces of major CW production equipment.	▪ About 29,500 chemical munitions, including some 29,000 unfilled and 500 filled with CW agents. ▪ About 250 tons of key precursors for the production of CW agents.
Biological weapons	▪ Laboratories of the Technical Research Centre at Salman Pak. ▪ No biological weapons and bulk BW agents were destroyed.	▪ 157 R-400 aerial bombs and 25 warheads for the Al-Hussein missiles filled with BW agents. ▪ About 12,500 litres of bulk BW agents. ▪ Mobile storage tanks.